

Date of Report: 08/18/2014

BURNED-AREA REPORT
(Reference FSH 2509.13)**PART I - TYPE OF REQUEST****A. Type of Report**

- ☒ 1. Funding request for estimated emergency stabilization funds
- ☐ 2. Accomplishment Report
- ☐ 3. No Treatment Recommendation

B. Type of Action

- ☒ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)
- ☐ 2. Interim Report #_____.
 - ☐ Updating the initial funding request based on more accurate site data or design analysis
 - ☐ Status of accomplishments to date
- ☐ 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

- A. Fire Name:** Little Deer
- B. Fire Number:** CA-KNF-005575
- C. State:** CA
- D. County:** Siskiyou
- E. Region:** 5
- F. Forest:** Klamath
- G. District:** Goosenest
- H. Fire Incident Job Code:** P5H95G
- I. Date Fire Started:** 07/31/2014
- J. Date Fire Contained:** 08/11/2014
- K. Suppression Cost:** \$4,375,000 (as of 08/12/2014)

L. Fire Suppression Damages Repaired with Suppression Funds

- 1. Fireline waterbarred (miles):** Approximately 22.2 miles of handline and 10.7 miles of dozer line waterbarred.
- 2. Fireline seeded (miles):** 0
- 3. Other (identify):** All roads, staging areas, water drafting sites, etc. disturbed by suppression activities will be repaired to a condition that is as close to pre-fire condition as reasonably possible. Repairs include grading, back-blading berms, pulling vegetation over disturbed areas, re-shaping spur roads, etc.

M. Watershed Numbers:

Soil Burn Severity Acres by Watershed								
HUC	HUC Name	Very Low Burn Severity (Acres)	Low Burn Severity (Acres)	Moderate Burn Severity (Acres)	High Burn Severity (Acres)	Total Watershed Burned (Acres)	Total Watershed Area (Acres)	Percent Watershed Burned
18010205010301	Upper First Creek	22	32	37	2	94	6,965	1%
18010205010302	Penoyar	148	215	814	145	1323	7,946	17%
18010205010303	Lower First Creek	132	291	934	307	1663	3,593	46%
18010205010304	Horsethief Creek	143	210	376	61	789	8,677	9%
18010207040102	Grass Lake Northeast	33	57	49	5	144	5,500	3%
18010207040103	Grass Lake South	210	217	821	233	1480	8,305	18%

Estimated acres of watershed burned includes both Klamath National Forest lands as well as Non-Forest Service lands.

N. Total Acres Burned:

[4,268] NFS Acres [] Other Federal [] State [1,235] Private

Soil Burn Severity Acres by Land Status					
Land Owner	Very Low Severity (Acres)	Low Severity (Acres)	Moderate Severity (Acres)	High Severity (Acres)	Total Burned (Acres)
Klamath NF	561	722	2399	586	4268
Private	135	1300	632	168	1235

O. Vegetation Types: The fire occurred primarily within Ponderosa pine-Juniper woodland with minor amounts of Incence cedar and white fir located at higher elevation in the northern portion of the fire. The understory was previously dominated by antelope bitterbrush (*Purshia tridentata* (Pursh) DC), mountain mahogany (*Cercocarpus betuloides* Nutt.), curl-leaf mountain mahogany (*Cercocarpus ledifolius* Nutt.), green-leaf manzanita

(*Arctostaphylos patula* Greene), and rabbit brush (*Ericameria nauseosa* (Pall. Ex Pursh) G.L. Nesom & Baird).

P. Dominant Soils: The soil families within the burned area include: Avis, Etchen, Iller, Kilmerques, Neuske, Oosen, Sheld, and Trojen. Soils are derived from fractured basalt or andesite and volcanic ash parent materials. Soil depths are moderately deep to fractured basalt or andesite resulting in high infiltration rates. Soil erosion hazard ratings within the fire area are moderate. Portions of the burned area do not have soils and are classified as cinderlands (cinders, ash, and other pyroclastic materials), and lava flows.

Q. Geologic Types: Little Deer mountain is what remains of a cinder cone that erupted about 100,000 years ago. Along with the eruption of cinders came flood basalts. The basalt makes up most of the bedrock in the fire perimeter. The micro-topography is related to lava flowing across the landscape and includes small piles of basaltic rock. The basalt is relatively flat lying and competent due to its young age and lack of weathering. There is little to no landslide potential in the fire perimeter.

R. Miles of Stream Channels by Order or Class:

Flow Regime by Severity (Miles)					
Flow Regime by Land Status	Very Low Severity (Miles)	Low Severity (Miles)	Moderate Severity (Miles)	High Severity (Miles)	Total (Miles)
Klamath NF					
Ephemeral	0.21	0.23	0.55	0.25	1.24
Private					
Ephemeral	0.07	0.14	0.29	0.29	0.78

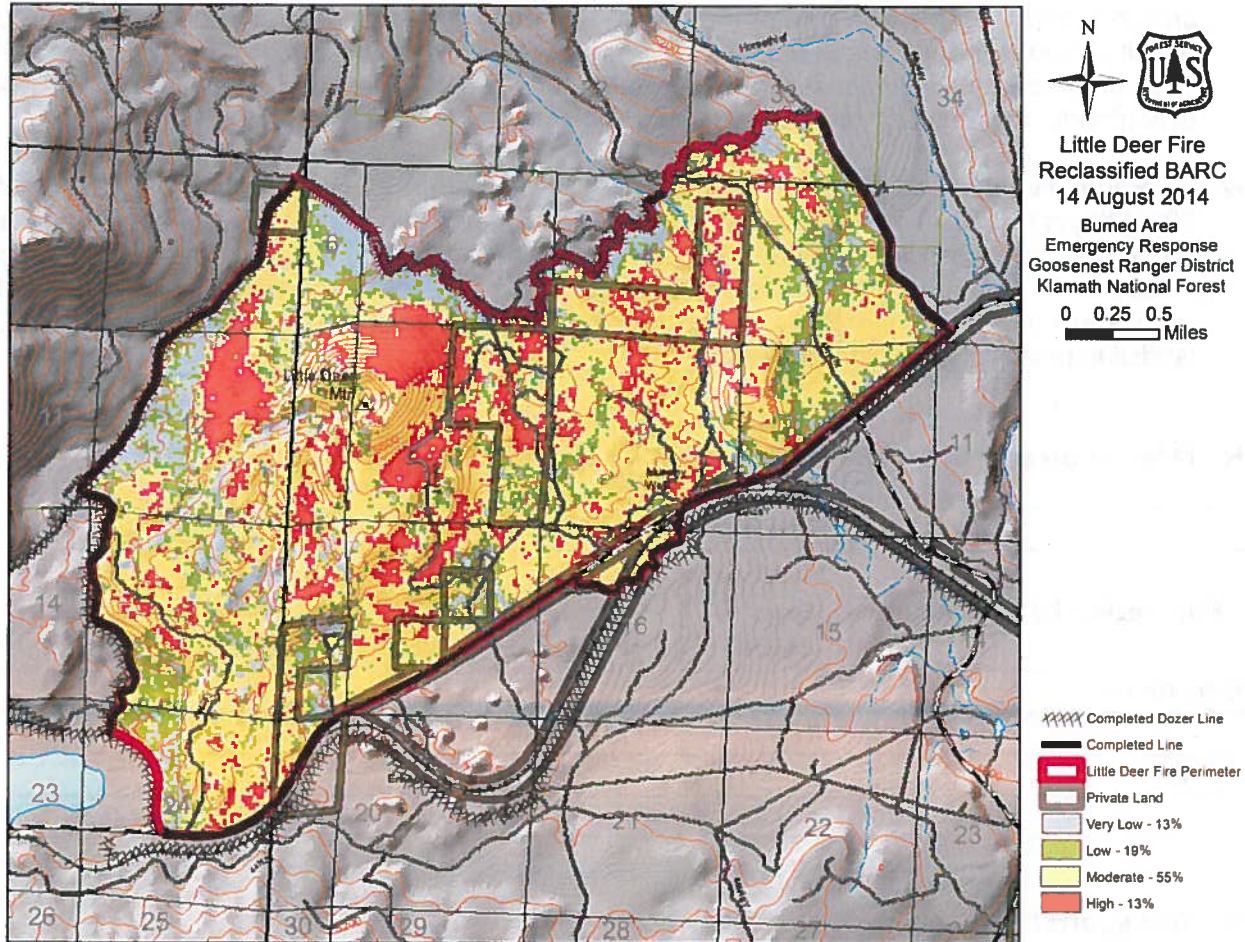
S. Transportation System

Trails: 0 FS Roads: 14.48 State Road: 4.30

Miles of Roads by Severity					
	Very Low Severity (Miles)	Low Severity (Miles)	Moderate Severity (Miles)	High Severity (Miles)	Total Burned (Miles)
Klamath NF	4.30	3.62	4.15	2.41	14.48
State Hwy 97	0.98	1.60	1.63	0.09	4.30

PART III - WATERSHED CONDITION

A. Burn Severity (acres): (very low) 696 (low) 1022
(moderate) 3031 (high) 754



B. Water-Repellent Soil (acres): 1,893 acres*.

*Assumes 50% water repellency of soils with high and moderate soil burn severity.

C. Soil Erosion Hazard Rating (acres):

Erosion Hazard Rating	Soil Burn Severity				Total
	Very Low	Low	Moderate	High	
Low ₁	116	115	480	188	899
Moderate	570	910	2558	566	4604
High	0	0	0	0	0

1-Areas with low soil erosion hazard are all classified as lava flows and cinderlands

Estimates include both Klamath National Forest Lands and non-Forest Service Lands.

D. Erosion Potential: Average erosion potential is 0.001 tons/acre. (Calculated from WEPP-ERMIT for a 2-year storm event and untreated hillslope. Model accuracy is +/-50%)

- E. **Sediment Potential:** 0.04 cubic yards / square mile (Calculated by converting erosion potential in D. to cu yards/square mile (assuming 1 cu yards equals 1.5 tons) and using a 10 percent delivery factor)

PART IV - HYDROLOGIC DESIGN FACTORS

- A. **Estimated Vegetative Recovery Period, (years):** 10
- B. **Design Chance of Success, (percent):** 65
- C. **Equivalent Design Recurrence Interval, (years):** 25
- D. **Design Storm Duration, (hours):** 6
- E. **Design Storm Magnitude, (inches):** 1.6
- F. **Design Flow, (cubic feet / second/ square mile):** 23
- G. **Estimated Reduction in Infiltration, (percent):** 62
- H. **Adjusted Design Flow, (cfs per square mile):** 37

PART V - SUMMARY OF ANALYSIS

- A. **Describe Critical Values/Resources and Threats (narrative):**

The following is a brief summary of the values within and along the fire area as well as the threats to those values.

Values at Risk:

The risk matrix below, Exhibit 2 of Interim Directive No.: **2520-2010-1**, was used to evaluate the Risk Level for each value identified during Assessment:

Probability of Damage or Loss	Magnitude of Consequences		
	Major	Moderate	Minor
	RISK		
Very Likely	Very High	Very High	Low
Likely	Very High	High	Low
Possible	High	Intermediate	Low
Unlikely	Intermediate	Low	Very Low

- Human Life and Safety-

- Potential loss of or injury to human life exists from cattle that may stray onto Interstate Hwy 97 as a result of wildfire destroying a range allotment fence. The Probability of Damage or Loss is Possible and the Magnitude of Consequences from human life and safety is Major. Therefore risk to human life and safety is High. **No Treatments Recommended with BAER – However** repair approximately 5 miles of the range allotment fencing adjacent to Hwy 97 with appropriated or other funding.
- Potential loss of or injury to human life exists from loss of reflective stop signs near Forest Service road intersections with Interstate Hwy 97. The Probability of Damage or Loss is Possible and the Magnitude of Consequences from human life and safety is Major. Therefore risk to human life and safety is High. **Treatments Recommended** – Replace reflective warning signs/stops signs damaged by the fire near Hwy 97.

- Property–

- **Loss to Forest Service Property:** the Probability of Damage or Loss of the fire affected roads is Unlikely to Very Likely and the Magnitude of Consequences ranges from Minor to Major resulting in a Low to Very High risk. **Treatments Recommended** – Construct armored rolling dips and re-surface roads that have a High or Very High Risk to prevent loss to FS property.

- Natural Resources –

- *Water used for municipal, domestic, hydropower, or agricultural supply or waters with special state or federal designations on or in close proximity to the burned NFS lands.* The Probability of Damage or Loss is Possible and the Magnitude of Consequences would be Minor resulting in Low risk. **No Treatments Recommended.**
- *Soil productivity and hydrologic function on burned NFS lands.* After a fire there is the potential threat of increased soil erosion affecting site productivity, and ash flows and increased peak flows that could cause streambank erosion. The Probability of Damage or Loss is Possible and the Magnitude of Consequences would be Minor resulting in Low risk. **No Treatments Recommended.**
- *Native or naturalized communities on NFS lands where invasive species or noxious weeds are absent or present in only minor amounts.* Due to the nature of fire suppression activities where tractors are used, the Probability of Damage or Loss from non-native species introduction is Likely to occur, with the Magnitude of Consequences being Moderate, because most locations of likely introduction can be accessed by road, or with moderate hikes. This results in a risk assessment of High. **Treatments Recommended** - Initial detection surveys and subsequent treatment of any noxious weed populations located during surveys.

- Cultural Resources–

- A total of eight previously recorded archaeological sites are located within the Little Deer burn perimeter and two archaeological sites are immediately adjacent the burn perimeter. None of these sites have been evaluated for eligibility to the National Register of Historic Places. The sites that were burned at moderate to high severity (five of the eight in the burn perimeter) are at greater post-fire risk from

vandalism/looting due to increased accessibility and visibility however, any efforts to camouflage these sites will in all likelihood, have the opposite result. Because the site locations are now completely devoid of vegetation, the addition of screening material will only draw attention to them, therefore **no emergency treatments are recommended.**

B. Emergency Treatment Objectives (narrative): The primary objective of this Burned Area Emergency Response Report is to recommend prompt actions deemed reasonable and necessary to effectively protect, reduce or minimize significant threats to human life and property and prevent unacceptable degradation of natural resources. The application of these BAER treatments would minimize on-site damages to the identified values at risk. The emergency treatments being recommended by the Little Deer Fire BAER Team are specifically designed to achieve the following results.

Proposed Treatments

The objectives of the treatments are to:

1. Protect human life and safety by replacing reflective stop signs at FS road intersections with Hwy 97.
2. Protect Forest Service investment in road infrastructure by improving road surface drainage through re-surfacing and construction of rolling dips.
3. Protect ecological value of biological diversity by monitoring and treating as necessary, sites where introduction of noxious weeds may have occurred in previously uninvaded sites.

C. Probability of Completing Treatment Prior to Damaging Storm or Event:

Land 90% Roads/Trails 90% Protection/Safety 90%

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	80	90	90
Roads/Trails	80	90	90
Protection/Safety	90	90	90

E. Cost of No-Action (Including Loss): \$690,000

F. Cost of Selected Alternative (Including Loss): \$39,175

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input type="checkbox"/> Soils	<input checked="" type="checkbox"/> Geology	<input type="checkbox"/> Range
<input type="checkbox"/> Forestry	<input type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input checked="" type="checkbox"/> Engineering
<input type="checkbox"/> Contracting	<input type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology
<input type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input checked="" type="checkbox"/> GIS

Team Leader: Gregg Bousfield

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Team:

Gregg Bousfield, Hydrologist

Angie Bell, Geologist and GIS

Erin Lonergan, Botanist

Jeanne Goetz, Heritage

Ken Bigelow, Engineering

Dave Seiler, Engineering

H. Treatment Narrative:

Land Treatments:

Treatments to mitigate the noxious weed emergency include initial detection surveys and subsequent treatment of any noxious weed populations located during surveys. Detection surveys will be conducted along completed fire lines, drop points, staging areas, and existing roads where invasion by noxious weeds is most probable. Surveys will begin in 2015 during appropriate phenological times for detection of target noxious weed/invasive plant species.

All newly discovered noxious weed populations will be mapped and entered into the National Resource Inventory System (NRIS) according to National protocol. Treatment will be recorded as directed by the same National protocols. Noxious weed treatment will consist of hand pulling to root depth and if seed is present, plants will be bagged and properly disposed.

Roads Treatments:

Roads with a high to very high risk of loss will have erosion prevention measures put into place such as, re-grading, re-surfacing, rolling dips construction/re-construction, etc.

Treatment	Qty.	Justification
Restore drainage Features, Re-grade Road (Miles)	4.6	Protecting the investment in principle and secondary routes. Maintain important and/or critical administrative and public access.
New or reconstructed Rolling Dip (Each)	24	Minimize damage to the road surface and template by diverting storm water run-off flow off the road. In critical cases hardening road surface with surface aggregate.
Surface Course, Pit Run Aggregate (cubic yards)	50	Minimize damage to the road surface and template by hardening road surface in critical locations such as dips and across drainages. Minimizes fill-slope deterioration.
Rip Rap (cubic yards)	40	Protects upstream fill slopes and dissipates energy to minimize erosion and help prevent head cut on fill slopes.

Protection/Safety Treatments:

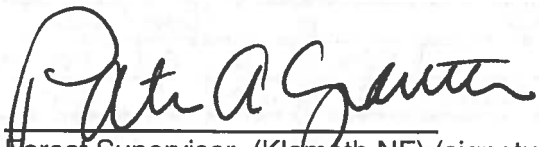
Fire damaged reflective warning/stop signs location at Forest Service road interections with highway 97 will be replaced.

I. Monitoring Narrative: None requested

Part VI –Emergency Stabilization Treatments and Source of Funds

Line Items	Units	Unit Cost	NFS Lands		Other \$	Other Lands				All Total \$
			# of Units	BAER \$		# of units	Fed \$	# of Units	Non Fed \$	
A. Land Treatments										
GS-5 labor	Days	\$133	6	\$798	\$0		\$0		\$0	\$798
Vehicle Mileage	miles	\$0.50	300	\$150	\$0		\$0		\$0	\$150
GS-9 admin	Days	\$264	3	\$792	\$0		\$0		\$0	\$792
GS-11 admin	Days	\$302	1	\$302	\$0		\$0		\$0	\$302
<i>Insert new items above this line!</i>										
Subtotal Land Treatments				\$2,042	\$0		\$0		\$0	\$2,042
B. Road and Trails										
Coarse surfacing, pit run	CY	\$ 38	50	\$1,900	\$0		\$0		\$0	\$1,900
Rip rap	CY	\$ 55	40	\$2,200	\$0		\$0		\$0	\$2,200
Rolling dip construction	Each	\$ 500	24	\$12,000	\$0		\$0		\$0	\$12,000
Road grading/ditch pulling	miles	\$ 3,000	4.6	\$13,800	\$0		\$0		\$0	\$13,800
2.5% P&O for contracting				\$747.50			\$0		\$0	\$748
10% mobilization				\$2,990.00						\$2,990
5% contract admin				\$1,495.00						\$1,495
<i>Insert new items above this line!</i>										
Subtotal Road & Trails				\$35,133	\$0		\$0		\$0	\$35,133
C. Protection/Safety										
Warning/stop signs	Each	\$400	5	\$2,000						\$2,000
Subtotal Protection/Safety				\$2,000	\$0		\$0		\$0	\$2,000
E. BAER Evaluation										
Region 5 only				\$8,729	\$0		\$0		\$0	\$8,729
<i>Insert new items above this line!</i>										
Subtotal Evaluation				---	\$0		\$0		\$0	---
G. Totals				\$39,175						\$39,175
Previously approved										
Total for this request				\$39,175						\$39,175

PART VII - APPROVALS

1. 
Forest Supervisor (Klamath NF) (signature)

8/20/14
Date

2. _____
R5 Regional Forester (signature)

Date